

CLAIMS

What is claimed is:

- 1 1. A method of managing electronic mail, the method comprising the steps of:
- 2 automatically generating a set of criteria based on contents of a plurality of
- 3 electronic mail messages received over a network;
- 4 receiving an electronic mail message over said network;
- 5 determining whether said electronic mail message satisfies said set of
- 6 criteria;
- 7 if said electronic mail message satisfies said set of criteria, then processing
- 8 said electronic mail message as a first type of electronic mail; and
- 9 if said electronic mail message does not satisfy said set of criteria, then
- 10 processing said electronic mail message as a second type of
- 11 electronic mail;
- 12 wherein said first type of electronic mail is processed differently than said
- 13 second type of electronic mail.

- 1 2. The method of Claim 1 wherein:
- 2 the method further comprises the step of generating a message signature for
- 3 said electronic mail message based on contents of said electronic mail
- 4 message; and

5 the step of determining whether said electronic mail message satisfies said
6 set of criteria includes determining whether said message signature
7 satisfies said set of criteria.

Sub E1 } 1 3. The method of Claim 1 wherein the step of determining whether said
2 electronic mail message satisfies said set of criteria includes determining
3 whether at least a portion of the contents in said electronic mail message
4 matches at least a portion of contents of at least a threshold number of said
5 plurality of electronic mail messages.

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1 4. The method of Claim 1 wherein the step of generating a set of criteria based
2 on contents of a plurality of electronic mail messages received over said
3 network includes tracking how many signature elements of said electronic
4 mail messages match.

Sub A5 } 1 5. The method of Claim 1 wherein the step of generating a set of criteria based
2 on contents of a plurality electronic mail messages received over said
3 network includes the steps of:
4 generating message signatures for each electronic mail message of said
5 plurality of electronic mail messages, wherein each message
6 signature includes one or more message signature elements; and

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counting how many of said one or more signature elements match signature elements from other message signatures.

1 6. The method of Claim 5 wherein the step of determining whether said
2 electronic mail message satisfies said set of criteria includes determining
3 whether a message signature generated for said electronic mail message
4 includes at least one signature element that matches a threshold number of
5 signature elements of previously generated message signatures.

1 7. The method of Claim 6 wherein the step of determining whether a message
2 signature generated for said electronic mail message includes at least one
3 signature element that matches a threshold number of signature elements,
4 further includes determining whether a message signature generated for said
5 electronic mail message includes at least one signature element that matches
6 a threshold number of signature elements of previously generated message
7 signatures that are associated with a period of time.

1 8. The method of Claim 1 wherein the step of processing said electronic mail
2 message as a first type of electronic mail includes adding a bulk electronic
3 mail flag to said electronic mail message.

1 9. The method of Claim 8, further including the steps of:

2 after processing said electronic mail message as a first type of electronic
3 mail, transmitting said electronic mail message to an electronic mail
4 server;

5 said electronic mail server receiving said electronic mail message;
6 said electronic mail server determining whether said electronic mail message
7 contains said bulk electronic mail flag; and
8 if said electronic mail message contains said bulk electronic mail flag, then
9 processing said electronic mail message without further verifying
10 whether said electronic mail message is bulk electronic mail.

1 10. A method of managing electronic mail, the method comprising the steps of:
2 a central server receiving from an electronic mail server a message signature
3 generated from an electronic mail message;
4 an electronic mail server determining whether said message signature
5 satisfies a set of criteria based on message signatures previously
6 received by said central server from a set of electronic mail servers;
7 and
8 if said received data satisfies a set of criteria, then said electronic mail server
9 processing said electronic mail message as a bulk electronic mail
10 message.

1 11. The method of Claim 10, wherein the step of said electronic mail server
2 determining whether said message signature satisfies a set of criteria includes
3 determining whether a portion of said message signature matches a portion
4 of each of a threshold number of message signatures previously received by
5 said central server from said set of electronic mail servers.

1 12. The method of Claim 11, wherein:
2 the step of a central server receiving from an electronic mail server a
3 message signature includes receiving a set of one or more values
4 generated by a one-way hash function; and
5 the step of said electronic mail server determining whether a portion of said
6 message signature matches includes determining whether at least one
7 of said set of one or more values matches a threshold number of
8 previously received values generated by a one-way hash function.

1 13. The method of Claim 12, the method further including the step of
2 transmitting one or more messages to said electronic mail server specifying
3 changes to one or more routines invoked by said electronic mail server to
4 generate message signatures.

1 14. The method of Claim 13, wherein the step of transmitting one or more
2 messages includes transmitting platform-independent byte code.

1 15. A method of managing electronic mail transmitted over a network, the
2 method comprising the steps of:
3 a central server receiving from a set of electronic mail servers message
4 signatures generated from electronic mail messages received by said
5 set of electronic mail servers, wherein each message signature
6 includes one or more signature elements;
7 said central server generating counts of how many times said one or more
8 signature elements are matched by signature elements from message
9 signatures generated for other electronic mail messages; and
10 said central server transmitting a message reflecting said counts.

1 16. The method of Claim 15, wherein:
2 the step of a central server receiving includes receiving a particular recipient
3 signature associated with a particular message signature; and
4 the step of generating counts includes generating counts of how many times
5 said one or more signature elements match signature elements that
6 are:
7 generated for other electronic mail messages, and
8 associated with a recipient signature that differs from said particular
9 recipient signature.

1 17. The method of Claim 16, wherein the step of transmitting messages
2 reflecting said counts includes transmitting said counts.

1 18. The method of Claim 16, wherein the step of transmitting messages
2 reflecting said counts includes transmitting signature elements associated
3 with counts greater than a threshold.

1 19. A method of managing electronic mail, the method comprising the steps of:
2 receiving an electronic mail message over a network;
3 generating a message signature for said electronic mail message by applying
4 contents of said electronic mail message to a function that produces
5 said message signature;
6 determining whether said message signature satisfies a set of criteria;
7 if said message signature satisfies said set of criteria, then processing said
8 electronic mail message as a first type of electronic mail; and
9 if said message signature does not satisfy said set of criteria, then processing
10 said electronic mail message as a second type of electronic mail.

1 20. The method of Claim 19, wherein the step of generating a message signature
2 includes invoking a one-way hash function that receives content from said
3 electronic mail message as input and generates said message signature as
4 output.

1 21. The method of Claim 19, wherein the method further includes the step of
2 receiving from a remote server data specifying one or more parameters used
3 by said function for generating said message signature.

1 22. The method of Claim 19, wherein:
2 the method further includes the step of receiving code transported from a
3 remote server; and
4 the step of generating a message signature includes executing said code.

1 23. The method of Claim 19, wherein:
2 the step of generating a message signature includes invoking a first set of
3 routines that perform said function; and
4 the method further includes the steps of:
5 receiving code from a remote server, and
6 updating said first set of routines based on said code.

1 24. The method of Claim 23, wherein the step of receiving code includes
2 receiving platform-independent byte code.

1 25. The method of Claim 23, wherein the step of receiving code includes
2 receiving machine executable code.

1 26. A computer-readable medium carrying one or more sequences of one or
2 more instructions for managing electronic mail, wherein the execution of the
3 one or more sequences of the one or more instructions causes the one or more
4 processors to perform the steps of:
5 automatically generating a set of criteria based on contents of a plurality of
6 electronic mail messages received over a network;
7 receiving an electronic mail message over said network;
8 determining whether said electronic mail message satisfies said set of
9 criteria;
10 if said electronic mail message satisfies said set of criteria, then processing
11 said electronic mail message as a first type of electronic mail; and
12 if said electronic mail message does not satisfy said set of criteria, then
13 processing said electronic mail message as a second type of
14 electronic mail;
15 wherein said first type of electronic mail is processed differently than said
16 second type of electronic mail.

1 27. The computer-readable medium of Claim 26 wherein:
2 the computer-readable medium further comprises sequences of instructions
3 for performing the step of generating a message signature for said

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4 electronic mail message based on contents of said electronic mail
5 message; and
6 the step of determining whether said electronic mail message satisfies said
7 set of criteria includes determining whether said message signature
8 satisfies said set of criteria.

1 28. The computer-readable medium of Claim 26 wherein the step of determining
2 whether said electronic mail message satisfies said set of criteria includes
3 determining whether at least a portion of the contents in said electronic mail
4 message matches at least a portion of contents of at least a threshold number
5 of said plurality of electronic mail messages.

1 29. A computer-readable medium carrying one or more sequences of one or
2 more instructions for managing electronic mail, wherein the execution of the
3 one or more sequences of the one or more instructions causes the one or
4 more processors to perform the steps of:
5 a central server receiving from an electronic mail server a message signature
6 generated from an electronic mail message;
7 an electronic mail server determining whether said message signature
8 satisfies a set of criteria based on message signatures previously

9 received by said central server from a set of electronic mail servers;
10 and
11 if said received data satisfies a set of criteria, then said electronic mail server
12 processing said electronic mail message as a bulk electronic mail
13 message.

1 30. The computer-readable medium of Claim 29, wherein the step of said
2 electronic mail server determining whether said message signature satisfies a
3 set of criteria includes determining whether a portion of said message
4 signature matches a portion of each of a threshold number of message
5 signatures previously received by said central server from said set of
6 electronic mail servers.

1 31. A computer-readable medium carrying one or more sequences of one or
2 more instructions for managing electronic mail, wherein the execution of the
3 one or more sequences of the one or more instructions causes the one or
4 more processors to perform the steps of:
5 a central server receiving from a set of electronic mail servers message
6 signatures generated from electronic mail messages received by said
7 set of electronic mail servers, wherein each message signature
8 includes one or more signature elements;

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9 said central server generating counts of how many times said one or more
10 signature elements are matched by signature elements from message
11 signatures generated for other electronic mail messages; and
12 said central server transmitting a message reflecting said counts.

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1 32. A computer-readable medium carrying one or more sequences of one or
2 more instructions for managing electronic mail, wherein the execution of the
3 one or more sequences of the one or more instructions causes the one or more
4 processors to perform the steps of:
5 receiving an electronic mail message over a network;
6 generating a message signature for said electronic mail message by applying
7 contents of said electronic mail message to a function that produces
8 said message signature;
9 determining whether said message signature satisfies a set of criteria;
10 if said message signature satisfies said set of criteria, then processing said
11 electronic mail message as a first type of electronic mail; and
12 if said message signature does not satisfy said set of criteria, then processing
13 said electronic mail message as a second type of electronic mail.

1 33. The computer-readable medium of Claim 32, wherein:
2 the step of generating a message signature includes invoking a first set of
3 routines that perform said function; and

